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## Sequence Listing

&lt;110&gt; Merck Patent GmbH

<120> DNA sequence and recombinant preparation of grass pollen allergen  
Lol p 4

&lt;130&gt; P 03/240

&lt;140&gt; DE 10359352.7

&lt;141&gt; 2003-12-16

&lt;160&gt; 27

&lt;170&gt; PatentIn version 3.1

&lt;210&gt; 1

&lt;211&gt; 1272

&lt;212&gt; DNA

&lt;213&gt; Lol p 4

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (2) .. (1270)

&lt;223&gt;

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ggc ggg cac gac tac gag ggc ctc tcg tac cgc tcc ctg cag ccc gag      97
Gly Gly His Asp Tyr Glu Gly Leu Ser Tyr Arg Ser Leu Gln Pro Glu
      20              25              30

aac ttc gca gtc gtc gac ctc aac cag atg cgg gcg gtg ttg gtg gac      145
Asn Phe Ala Val Val Asp Leu Asn Gln Met Arg Ala Val Leu Val Asp
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&lt;211&gt; 423

&lt;212&gt; PRT

&lt;213&gt; Lol p 4

&lt;400&gt; 2

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20 25 30

Asn Phe Ala Val Val Asp Leu Asn Gln Met Arg Ala Val Leu Val Asp
35 40 45

Gly Lys Ala Arg Thr Ala Trp Val Asp Ser Gly Ala Gln Leu Gly Glu
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Leu Tyr Tyr Ala Ile Ser Lys Tyr Ser Arg Thr Leu Ala Phe Pro Ala  
 65 70 75 80

Gly Val Cys Pro Thr Ile Gly Val Gly Gly Asn Leu Ala Gly Gly Gly  
 85 90 95

Phe Gly Met Leu Leu Arg Lys Tyr Gly Ile Ala Ala Glu Asn Val Ile  
 100 105 110

Asp Val Lys Leu Val Asp Ala Asn Gly Lys Leu His Asp Lys Lys Ser  
 115 120 125

Met Gly Asp Asp His Phe Trp Ala Val Arg Gly Gly Gly Gly Glu Ser  
 130 135 140

Phe Gly Ile Val Val Ser Trp Gln Val Lys Leu Leu Pro Val Pro Pro  
 145 150 155 160

Thr Val Thr Ile Phe Lys Ile Pro Lys Ser Val Ser Glu Gly Ala Val  
 165 170 175

Asp Ile Ile Asn Lys Trp Gln Leu Val Ala Pro Gln Leu Pro Ala Asp  
 180 185 190

Leu Met Ile Arg Ile Ile Ala Met Gly Pro Lys Ala Thr Phe Glu Ala  
 195 200 205

Met Tyr Leu Gly Thr Cys Lys Thr Leu Thr Pro Met Met Gln Ser Lys  
 210 215 220

Phe Pro Glu Leu Gly Met Asn Ala Ser His Cys Asn Glu Met Ser Trp  
 225 230 235 240

Ile Glu Ser Ile Pro Phe Val His Leu Gly His Arg Asp Ser Leu Glu  
 245 250 255

Gly Asp Leu Leu Asn Arg Asn Asn Thr Phe Lys Pro Phe Ala Glu Tyr  
 260 265 270

Lys Ser Asp Tyr Val Tyr Glu Pro Phe Pro Lys Ser Val Trp Glu Gln  
 275 280 285

Ile Phe Gly Thr Trp Leu Val Lys Pro Gly Ala Gly Ile Met Ile Phe  
 290 295 300

Asp Pro Tyr Gly Ala Thr Ile Ser Ala Thr Pro Glu Ala Ala Thr Pro  
 305 310 315 320

Phe Pro His Arg Lys Gly Val Leu Phe Asn Ile Gln Tyr Val Asn Tyr  
                           325                          330                          335

Trp Phe Ala Pro Gly Ala Gly Ala Ala Pro Leu Ser Trp Ser Lys Glu  
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Ile Tyr Asn Tyr Met Glu Pro Tyr Val Ser Lys Asn Pro Arg Gln Ala  
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Tyr Ala Asn Tyr Arg Asp Ile Asp Leu Gly Arg Asn Glu Val Val Asn  
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Gly Val Ser Thr Tyr Ser Ser Gly Lys Val Trp Gly Gln Lys Tyr Phe  
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Lys	Glu	Ile	Pro	Pro	Arg	Leu	Leu	Tyr	Ala	Lys	Ser	Ser	Pro	Ala	Tyr	
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ccc	tca	gtc	ctg	ggg	cag	acc	atc	cgg	aac	tcg	agg	tgg	tcg	tcg	ccg	144
Pro	Ser	Val	Leu	Gly	Gln	Thr	Ile	Arg	Asn	Ser	Arg	Trp	Ser	Ser	Pro	
		35					40					45				

gac	aac	gtg	aag	ccg	ctc	tac	atc	atc	acc	ccc	acc	aac	gtc	tcc	cac	192
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Ile	Gln	Ser	Ala	Val	Val	Cys	Gly	Arg	Arg	Tyr	Asp	Val	Arg	Ile	Arg	
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Gln	Pro	Glu	Asn	Phe	Ala	Val	Val	Asp	Leu	Asn	Gln	Met	Arg	Ala	Val	
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Asn	Val	Ile	Asp	Val	Lys	Leu	Val	Asp	Ala	Asn	Gly	Lys	Leu	His	Asp	
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aag	aag	tcc	atg	ggc	gac	gac	cat	ttc	tgg	gcc	gtg	agg	ggg	ggc	ggc	624
Lys	Lys	Ser	Met	Gly	Asp	Asp	His	Phe	Trp	Ala	Val	Arg	Gly	Gly	Gly	
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Gly	Glu	Ser	Phe	Gly	Ile	Val	Val	Ser	Trp	Gln	Val	Lys	Leu	Leu	Pro	
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Val	Pro	Pro	Thr	Val	Thr	Ile	Phe	Lys	Ile	Pro	Lys	Ser	Val	Ser	Glu	
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Pro	Ala	Asp	Leu	Met	Ile	Arg	Ile	Ile	Ala	Met	Gly	Pro	Lys	Ala	Thr	
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Phe	Glu	Ala	Met	Tyr	Leu	Gly	Thr	Cys	Lys	Thr	Leu	Thr	Pro	Met	Met	
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cag	agc	aag	ttc	ccc	gag	ctt	ggc	atg	aac	gcc	tcg	cac	tgc	aac	gag	912
Gln	Ser	Lys	Phe	Pro	Glu	Leu	Gly	Met	Asn	Ala	Ser	His	Cys	Asn	Glu	
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tgg gag cag atc ttc ggc acc tgg ctc gtg aag cct ggt gcg ggg att Trp Glu Gln Ile Phe Gly Thr Trp Leu Val Lys Pro Gly Ala Gly Ile 355 360 365	1104
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gtc aac tac tgg ttc gct ccg gga gcc ggc gcc gcg ccc ttg tca tgg Val Asn Tyr Trp Phe Ala Pro Gly Ala Gly Ala Ala Pro Leu Ser Trp 405 410 415	1248
agc aag gaa atc tac aac tac atg gag ccg tac gtg agc aag aac ccc Ser Lys Glu Ile Tyr Asn Tyr Met Glu Pro Tyr Val Ser Lys Asn Pro 420 425 430	1296
agg cag gcc tac gcc aac tac agg gac atc gac ctc ggg agg aac gag Arg Gln Ala Tyr Ala Asn Tyr Arg Asp Ile Asp Leu Gly Arg Asn Glu 435 440 445	1344
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aaa tat ttc aag ggt aac ttc gag agg ctc gcc att acc aag ggc aag Lys Tyr Phe Lys Gly Asn Phe Glu Arg Leu Ala Ile Thr Lys Gly Lys 465 470 475 480	1440
gtg gat cct acg gat tac ttc agg aac gag cag agc atc ccg ccg ctc Val Asp Pro Thr Asp Tyr Phe Arg Asn Glu Gln Ser Ile Pro Pro Leu 485 490 495	1488
atc aaa aag tac tga Ile Lys Lys Tyr 500	1503

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&lt;211&gt; 500

&lt;212&gt; PRT

&lt;213&gt; Lol p 4

&lt;400&gt; 4

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Pro Ser Val Leu Gly Gln Thr Ile Arg Asn Ser Arg Trp Ser Ser Pro  
35 40 45

Asp Asn Val Lys Pro Leu Tyr Ile Ile Thr Pro Thr Asn Val Ser His  
50 55 60

Ile Gln Ser Ala Val Val Cys Gly Arg Arg Tyr Asp Val Arg Ile Arg  
65 70 75 80

Val Arg Ser Gly Gly His Asp Tyr Glu Gly Leu Ser Tyr Arg Ser Leu  
85 90 95

Gln Pro Glu Asn Phe Ala Val Val Asp Leu Asn Gln Met Arg Ala Val  
100 105 110

Leu Val Asp Gly Lys Ala Arg Thr Ala Trp Val Asp Ser Gly Ala Gln  
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Leu Gly Glu Leu Tyr Tyr Ala Ile Ser Lys Tyr Ser Arg Thr Leu Ala  
130 135 140

Phe Pro Ala Gly Val Cys Pro Thr Ile Gly Val Gly Gly Asn Leu Ala  
145 150 155 160

Gly Gly Gly Phe Gly Met Leu Leu Arg Lys Tyr Gly Ile Ala Ala Glu  
165 170 175

Asn Val Ile Asp Val Lys Leu Val Asp Ala Asn Gly Lys Leu His Asp  
180 185 190

Lys Lys Ser Met Gly Asp Asp His Phe Trp Ala Val Arg Gly Gly Gly  
195 200 205

Gly Glu Ser Phe Gly Ile Val Val Ser Trp Gln Val Lys Leu Leu Pro  
210 215 220

Val Pro Pro Thr Val Thr Ile Phe Lys Ile Pro Lys Ser Val Ser Glu  
225 230 235 240

Gly Ala Val Asp Ile Ile Asn Lys Trp Gln Leu Val Ala Pro Gln Leu



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Pro	Ala	Asp	Leu	Met	Ile	Arg	Ile	Ile	Ala	Met	Gly	Pro	Lys	Ala	Thr
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Gln	Ser	Lys	Phe	Pro	Glu	Leu	Gly	Met	Asn	Ala	Ser	His	Cys	Asn	Glu
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Met	Ser	Trp	Ile	Glu	Ser	Ile	Pro	Phe	Val	His	Leu	Gly	His	Arg	Asp
305					310					315					320
Ser	Leu	Glu	Gly	Asp	Leu	Leu	Asn	Arg	Asn	Asn	Thr	Phe	Lys	Pro	Phe
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Ala	Glu	Tyr	Lys	Ser	Asp	Tyr	Val	Tyr	Glu	Pro	Phe	Pro	Lys	Ser	Val
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Trp	Glu	Gln	Ile	Phe	Gly	Thr	Trp	Leu	Val	Lys	Pro	Gly	Ala	Gly	Ile
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Met	Ile	Phe	Asp	Pro	Tyr	Gly	Ala	Thr	Ile	Ser	Ala	Thr	Pro	Glu	Ala
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Ala	Thr	Pro	Phe	Pro	His	Arg	Lys	Gly	Val	Leu	Phe	Asn	Ile	Gln	Tyr
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Val	Asn	Tyr	Trp	Phe	Ala	Pro	Gly	Ala	Gly	Ala	Ala	Pro	Leu	Ser	Trp
				405					410					415	
Ser	Lys	Glu	Ile	Tyr	Asn	Tyr	Met	Glu	Pro	Tyr	Val	Ser	Lys	Asn	Pro
			420					425					430		
Arg	Gln	Ala	Tyr	Ala	Asn	Tyr	Arg	Asp	Ile	Asp	Leu	Gly	Arg	Asn	Glu
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Val	Val	Asn	Gly	Val	Ser	Thr	Tyr	Ser	Ser	Gly	Lys	Val	Trp	Gly	Gln
	450					455					460				
Lys	Tyr	Phe	Lys	Gly	Asn	Phe	Glu	Arg	Leu	Ala	Ile	Thr	Lys	Gly	Lys
465					470					475					480
Val	Asp	Pro	Thr	Asp	Tyr	Phe	Arg	Asn	Glu	Gln	Ser	Ile	Pro	Pro	Leu
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aaa	gaa	atc	ccg	ccg	cgt	ctg	ttg	tac	gcg	aaa	tcg	tcg	ccg	gcg	tat	96
Lys	Glu	Ile	Pro	Pro	Arg	Leu	Leu	Tyr	Ala	Lys	Ser	Ser	Pro	Ala	Tyr	
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ccc	tca	gtc	ctg	ggg	cag	acc	atc	cgg	aac	tcg	agg	tgg	tcg	tcg	ccg	144
Pro	Ser	Val	Leu	Gly	Gln	Thr	Ile	Arg	Asn	Ser	Arg	Trp	Ser	Ser	Pro	
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gac	aac	gtg	aag	ccg	ctc	tac	atc	atc	acc	ccc	acc	aac	gtc	tcc	cac	192
Asp	Asn	Val	Lys	Pro	Leu	Tyr	Ile	Ile	Thr	Pro	Thr	Asn	Val	Ser	His	
	50					55					60					

atc	cag	tcc	gcc	gtg	gtg	tgc	ggc	cgc	cgc	cac	agc	gtc	cgc	atc	cgc	240
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Val	Arg	Ser	Gly	Gly	His	Asp	Tyr	Glu	Gly	Leu	Ser	Tyr	Arg	Ser	Leu	
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cag	ccc	gag	acg	ttc	gcc	gtc	gtc	gac	ctc	aac	aag	atg	cgg	gcg	gtg	336
Gln	Pro	Glu	Thr	Phe	Ala	Val	Val	Asp	Leu	Asn	Lys	Met	Arg	Ala	Val	
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tgg	gtg	gac	ggc	aag	gcc	cgc	acg	gcg	tgg	gtg	gac	tcc	ggc	gcg	cag	384
Trp	Val	Asp	Gly	Lys	Ala	Arg	Thr	Ala	Trp	Val	Asp	Ser	Gly	Ala	Gln	
		115					120					125				

ctc	ggc	gag	ctc	tac	tac	gcc	atc	tat	aag	gcg	agc	ccc	acg	ctg	gcg	432
Leu	Gly	Glu	Leu	Tyr	Tyr	Ala	Ile	Tyr	Lys	Ala	Ser	Pro	Thr	Leu	Ala	
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Phe	Pro	Ala	Gly	Val	Cys	Pro	Thr	Ile	Gly	Val	Gly	Gly	Asn	Phe	Ala	

145				150				155				160				
ggc Gly	ggc Gly	ggc Gly	ttc Phe	ggc Gly 165	atg Met	ctg Leu	ctg Leu	cgc Arg	aag Lys 170	tac Tyr	ggc Gly	atc Ile	gcc Ala	gcg Ala 175	gag Glu	528
aac Asn	gtc Val	atc Ile	gac Asp 180	gtg Val	aag Lys	ctc Leu	gtc Val	gac Asp 185	gcc Ala	aac Asn	ggc Gly	aag Lys	ctg Leu 190	cac His	gac Asp	576
aag Lys	aag Lys	tcc Ser 195	atg Met	ggc Gly	gac Asp	gac Asp	cat His 200	ttc Phe	tgg Trp	gcc Ala	gtc Val	agg Arg 205	ggc Gly	ggc Gly	ggg Gly	624
ggc Gly	gag Glu 210	agc Ser	ttc Phe	ggc Gly	atc Ile	gtg Val 215	gtc Val	gcg Ala	tgg Trp	cag Gln	gtg Val 220	aag Lys	ctc Leu	ctg Leu	cgc Pro	672
gtg Val 225	cgc Pro	ccc Pro	acc Thr	gtg Val	aca Thr 230	ata Ile	ttc Phe	aag Lys	atc Ile	tcc Ser 235	aag Lys	aca Thr	gtg Val	agc Ser	gag Glu 240	720
ggc Gly	gcc Ala	gtg Val	gac Asp	atc Ile 245	atc Ile	aac Asn	aag Lys	tgg Trp	caa Gln 250	gtg Val	gtc Val	gcg Ala	ccg Pro	cag Gln 255	ctt Leu	768
ccc Pro	gcc Ala	gac Asp	ctc Leu 260	atg Met	atc Ile	cgc Arg	atc Ile	atc Ile 265	gcg Ala	cag Gln	ggg Gly	ccc Pro	aag Lys 270	gcc Ala	acg Thr	816
ttc Phe	gag Glu	gcc Ala 275	atg Met	tac Tyr	ctc Leu	ggc Gly	acc Thr 280	tgc Cys	aaa Lys	acc Thr	ctg Leu	acg Thr 285	ccg Pro	ttg Leu	atg Met	864
agc Ser	agc Ser 290	aag Lys	ttc Phe	ccg Pro	gag Glu	ctc Leu 295	ggc Gly	atg Met	aac Asn	ccc Pro	tcc Ser 300	cac His	tgc Cys	aac Asn	gag Glu	912
atg Met 305	tca Ser	tgg Trp	atc Ile	cag Gln	tcc Ser 310	atc Ile	ccc Pro	ttc Phe	gtc Val	cac His 315	ctc Leu	ggc Gly	cac His	agg Arg	gac Asp 320	960
gcc Ala	ctc Leu	gag Glu	gac Asp	gac Asp 325	ctc Leu	ctc Leu	aac Asn	cgc Arg	aac Asn 330	aac Asn	tcc Ser	ttc Phe	aag Lys	ccc Pro 335	ttc Phe	1008
gcc Ala	gaa Glu	tac Tyr	aag Lys 340	tcc Ser	gac Asp	tac Tyr	gtc Val	tac Tyr 345	cag Gln	ccc Pro	ttc Phe	ccc Pro	aag Lys 350	acc Thr	gtc Val	1056
tgg Trp	gag Glu	cag Gln 355	atc Ile	ctc Leu	aac Asn	acc Thr	tgg Trp 360	ctc Leu	gtc Val	aag Lys	ccc Pro	ggc Gly 365	gcc Ala	ggg Gly	atc Ile	1104
atg Met	atc Ile 370	ttc Phe	gac Asp	ccc Pro	tac Tyr	ggc Gly 375	gcc Ala	acc Thr	atc Ile	agc Ser	gcc Ala 380	acc Thr	ccg Pro	gag Glu	tcc Ser	1152
gcc Ala 385	acg Thr	ccc Pro	ttc Phe	cct Pro	cac His 390	cgc Arg	aag Lys	ggc Gly	gtc Val	ctc Leu 395	ttc Phe	aac Asn	atc Ile	cag Gln	tac Tyr 400	1200
gtc	aac	tac	tgg	ttc	gcc	ccg	gga	gcc	gcc	gcc	gcg	ccc	ctc	tgc	tgg	1248

Val	Asn	Tyr	Trp	Phe	Ala	Pro	Gly	Ala	Ala	Ala	Ala	Pro	Leu	Ser	Trp		
				405					410					415			
agc	aag	gac	atc	tac	aac	tac	atg	gag	ccc	tac	gtg	agc	aag	aac	ccc		1296
Ser	Lys	Asp	Ile	Tyr	Asn	Tyr	Met	Glu	Pro	Tyr	Val	Ser	Lys	Asn	Pro		
			420					425					430				
agg	cag	gcg	tac	gca	aac	tac	agg	gac	atc	gac	ctc	ggc	agg	aac	gag		1344
Arg	Gln	Ala	Tyr	Ala	Asn	Tyr	Arg	Asp	Ile	Asp	Leu	Gly	Arg	Asn	Glu		
		435					440					445					
gtg	gtc	aac	gac	gtc	tcc	acc	tac	gcc	agc	ggc	aag	gtc	tgg	ggc	cag		1392
Val	Val	Asn	Asp	Val	Ser	Thr	Tyr	Ala	Ser	Gly	Lys	Val	Trp	Gly	Gln		
	450					455					460						
aaa	tac	ttc	aag	ggc	aac	ttc	gag	agg	ctc	gcc	att	acc	aag	ggc	aag		1440
Lys	Tyr	Phe	Lys	Gly	Asn	Phe	Glu	Arg	Leu	Ala	Ile	Thr	Lys	Gly	Lys		
465					470					475					480		
gtc	gat	cct	acc	gac	tac	ttc	agg	aac	gag	cag	agc	atc	ccg	ccg	ctc		1488
Val	Asp	Pro	Thr	Asp	Tyr	Phe	Arg	Asn	Glu	Gln	Ser	Ile	Pro	Pro	Leu		
				485					490					495			
atc	aaa	aag	tac	tga													1503
Ile	Lys	Lys	Tyr														
			500														

&lt;210&gt; 6

&lt;211&gt; 500

&lt;212&gt; PRT

&lt;213&gt; Ph1 p 4

&lt;400&gt; 6

Tyr	Phe	Pro	Pro	Pro	Ala	Ala	Lys	Glu	Asp	Phe	Leu	Gly	Cys	Leu	Val		
1				5					10					15			
Lys	Glu	Ile	Pro	Pro	Arg	Leu	Leu	Tyr	Ala	Lys	Ser	Ser	Pro	Ala	Tyr		
			20					25					30				
Pro	Ser	Val	Leu	Gly	Gln	Thr	Ile	Arg	Asn	Ser	Arg	Trp	Ser	Ser	Pro		
		35					40					45					
Asp	Asn	Val	Lys	Pro	Leu	Tyr	Ile	Ile	Thr	Pro	Thr	Asn	Val	Ser	His		
	50					55					60						
Ile	Gln	Ser	Ala	Val	Val	Cys	Gly	Arg	Arg	His	Ser	Val	Arg	Ile	Arg		
65					70					75					80		
Val	Arg	Ser	Gly	Gly	His	Asp	Tyr	Glu	Gly	Leu	Ser	Tyr	Arg	Ser	Leu		
				85					90					95			

Gln Pro Glu Thr Phe Ala Val Val Asp Leu Asn Lys Met Arg Ala Val  
 100 105 110

Trp Val Asp Gly Lys Ala Arg Thr Ala Trp Val Asp Ser Gly Ala Gln  
 115 120 125

Leu Gly Glu Leu Tyr Tyr Ala Ile Tyr Lys Ala Ser Pro Thr Leu Ala  
 130 135 140

Phe Pro Ala Gly Val Cys Pro Thr Ile Gly Val Gly Gly Asn Phe Ala  
 145 150 155 160

Gly Gly Gly Phe Gly Met Leu Leu Arg Lys Tyr Gly Ile Ala Ala Glu  
 165 170 175

Asn Val Ile Asp Val Lys Leu Val Asp Ala Asn Gly Lys Leu His Asp  
 180 185 190

Lys Lys Ser Met Gly Asp Asp His Phe Trp Ala Val Arg Gly Gly Gly  
 195 200 205

Gly Glu Ser Phe Gly Ile Val Val Ala Trp Gln Val Lys Leu Leu Pro  
 210 215 220

Val Pro Pro Thr Val Thr Ile Phe Lys Ile Ser Lys Thr Val Ser Glu  
 225 230 235 240

Gly Ala Val Asp Ile Ile Asn Lys Trp Gln Val Val Ala Pro Gln Leu  
 245 250 255

Pro Ala Asp Leu Met Ile Arg Ile Ile Ala Gln Gly Pro Lys Ala Thr  
 260 265 270

Phe Glu Ala Met Tyr Leu Gly Thr Cys Lys Thr Leu Thr Pro Leu Met  
 275 280 285

Ser Ser Lys Phe Pro Glu Leu Gly Met Asn Pro Ser His Cys Asn Glu  
 290 295 300

Met Ser Trp Ile Gln Ser Ile Pro Phe Val His Leu Gly His Arg Asp  
 305 310 315 320

Ala Leu Glu Asp Asp Leu Leu Asn Arg Asn Asn Ser Phe Lys Pro Phe  
 325 330 335

Ala Glu Tyr Lys Ser Asp Tyr Val Tyr Gln Pro Phe Pro Lys Thr Val  
 340 345 350

Trp Glu Gln Ile Leu Asn Thr Trp Leu Val Lys Pro Gly Ala Gly Ile  
 355 360 365

Met Ile Phe Asp Pro Tyr Gly Ala Thr Ile Ser Ala Thr Pro Glu Ser  
 370 375 380

Ala Thr Pro Phe Pro His Arg Lys Gly Val Leu Phe Asn Ile Gln Tyr  
 385 390 395 400

Val Asn Tyr Trp Phe Ala Pro Gly Ala Ala Ala Ala Pro Leu Ser Trp  
 405 410 415

Ser Lys Asp Ile Tyr Asn Tyr Met Glu Pro Tyr Val Ser Lys Asn Pro  
 420 425 430

Arg Gln Ala Tyr Ala Asn Tyr Arg Asp Ile Asp Leu Gly Arg Asn Glu  
 435 440 445

Val Val Asn Asp Val Ser Thr Tyr Ala Ser Gly Lys Val Trp Gly Gln  
 450 455 460

Lys Tyr Phe Lys Gly Asn Phe Glu Arg Leu Ala Ile Thr Lys Gly Lys  
 465 470 475 480

Val Asp Pro Thr Asp Tyr Phe Arg Asn Glu Gln Ser Ile Pro Pro Leu  
 485 490 495

Ile Lys Lys Tyr  
 500

<210> 7

<211> 12

<212> PRT

<213> Dactylus glomerata

<400> 7

Asp Ile Tyr Asn Tyr Met Glu Pro Tyr Val Ser Lys  
 1 5 10

<210> 8

<211> 11

- 15 -

&lt;212&gt; PRT

&lt;213&gt; Dactylus glomerata

&lt;400&gt; 8

Val	Asp	Pro	Thr	Asp	Tyr	Phe	Gly	Asn	Glu	Gln
1				5					10	

&lt;210&gt; 9

&lt;211&gt; 17

&lt;212&gt; PRT

&lt;213&gt; Dactylus glomerata

&lt;400&gt; 9

Ala	Arg	Thr	Ala	Trp	Val	Asp	Ser	Gly	Ala	Gln	Leu	Gly	Glu	Leu	Ser
1				5					10					15	

Tyr

&lt;210&gt; 10

&lt;211&gt; 15

&lt;212&gt; PRT

&lt;213&gt; Dactylus glomerata

&lt;400&gt; 10

Gly	Val	Leu	Phe	Asn	Ile	Gln	Tyr	Val	Asn	Tyr	Trp	Phe	Ala	Pro
1				5					10					15

&lt;210&gt; 11

&lt;211&gt; 11

&lt;212&gt; PRT

&lt;213&gt; Cynodon dactylon

&lt;400&gt; 11

Lys	Thr	Val	Lys	Pro	Leu	Tyr	Ile	Ile	Thr	Pro
1				5					10	

<210> 12

<211> 22

<212> PRT

<213> Cynodon dactylon

<400> 12

Lys	Gln	Val	Glu	Arg	Asp	Phe	Leu	Thr	Ser	Leu	Thr	Lys	Asp	Ile	Pro
1				5					10					15	

Gln	Leu	Tyr	Leu	Lys	Ser
			20		

<210> 13

<211> 16

<212> PRT

<213> Cynodon dactylon

<400> 13

Thr	Val	Lys	Pro	Leu	Tyr	Ile	Ile	Thr	Pro	Ile	Thr	Ala	Ala	Met	Ile
1				5					10					15	

<210> 14

<211> 24

<212> PRT

<213> Cynodon dactylon

<400> 14

Leu	Arg	Lys	Tyr	Gly	Thr	Ala	Ala	Asp	Asn	Val	Ile	Asp	Ala	Lys	Val
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Val	Asp	Ala	Gln	Gly	Arg	Leu	Leu
			20				

<210> 15

<211> 14

<212> PRT



<213> Cynodon dactylon

<400> 15

Lys Trp Gln Thr Val Ala Pro Ala Leu Pro Asp Pro Asn Met  
1 5 10

<210> 16

<211> 15

<212> PRT

<213> Cynodon dactylon

<400> 16

Val Thr Trp Ile Glu Ser Val Pro Tyr Ile Pro Met Gly Asp Lys  
1 5 10 15

<210> 17

<211> 19

<212> PRT

<213> Cynodon dactylon

<220>

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<222> (8)..(8)

<223> undetermined amino acid

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1 5 10 15

Gly Lys Tyr

<210> 18

<211> 23

<212> PRT

<213> Cynodon dactylon

<400> 18

Thr Ser Asn Ile Lys Ala Phe Gly Lys Tyr Lys Ser Asp Tyr Val Leu  
1 5 10 15

Glu Pro Ile Pro Lys Lys Ser  
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<210> 19

<211> 13

<212> PRT

<213> Cynodon dactylon

<400> 19

Tyr Arg Asp Leu Asp Leu Gly Val Asn Gln Val Val Gly  
1 5 10

<210> 20

<211> 15

<212> PRT

<213> Cynodon dactylon

<400> 20

Ser Ala Thr Pro Pro Thr His Arg Ser Gly Val Leu Phe Asn Ile  
1 5 10 15

<210> 21

<211> 36

<212> PRT

<213> Cynodon dactylon

<400> 21

Ala Ala Ala Ala Leu Pro Thr Gln Val Thr Arg Asp Ile Tyr Ala Phe  
1 5 10 15

Met Thr Pro Tyr Val Ser Lys Asn Pro Arg Gln Ala Tyr Val Asn Tyr

20

25

30

Arg Asp Leu Asp  
35

&lt;210&gt; 22

&lt;211&gt; 14

&lt;212&gt; PRT

&lt;213&gt; Lolium perenne

&lt;400&gt; 22

Phe Leu Glu Pro Val Leu Gly Leu Ile Phe Pro Ala Gly Val  
1 5 10

&lt;210&gt; 23

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Lolium perenne

&lt;400&gt; 23

Gly Leu Ile Glu Phe Pro Ala Gly Val  
1 5

&lt;210&gt; 24

&lt;211&gt; 22

&lt;212&gt; DNA

&lt;213&gt; Lolium perenne

&lt;400&gt; 24

ggctcccggg gcgaaccagt ag

22

&lt;210&gt; 25

&lt;211&gt; 23

&lt;212&gt; DNA

&lt;213&gt; Lolium perenne

<400> 25  
accaacgcct cccacatcca gtc 23

<210> 26

<211> 49

<212> DNA

<213> Lolium perenne

<400> 26  
gataagcttg aattctgatt agtacttttt gatcagcggc gggatgctc 49

<210> 27

<211> 49

<212> DNA

<213> Lolium perenne

<400> 27  
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